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| **COVERING BOTH GLE’S AND CCSS**  **(State correlation is not a perfect match-What makes them the same….what makes them different?)**  1.1.2 Determine whether relationships are linear or nonlinear.  **CC.8.F.3** Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.  1.2.5 Represent linear and nonlinear mathematical relationships with verbal descriptions, tables, graphs and equations (when possible).  **CC.8.F.5** Describe qualitatively the functional relationship between two quantities by reading a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.  **CC.8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.  **CC.8.EE.6** Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y =mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.  1.1.4 Examine and make comparisons in writing between linear and non-linear mathematical relationships including *y* = *mx*, *y* = *mx*2 and *y* = *mx*3 using a variety of representations.  **CC.8.F.3** Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.  **CC.8.F.5** Describe qualitatively the functional relationship between two quantities by reading a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.  1.1.3 Write and solve problems involving proportional relationships (direct variation) using linear equations (*y* = *mx*).  **CC.8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.  1.2.5 Represent linear and nonlinear mathematical relationships with verbal descriptions, tables, graphs and equations (when possible).  **CC.8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. 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Sketch a graph that exhibits the qualitative features of a function that has been described verbally.  1.2.6 Determine the constant rate of change in a linear relationship and recognize this as the slope of a line.  **CC.8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.  **CC.8.EE.6** Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y =mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.  **CC.8.F.4** Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.  1.2.7 Compare and contrast the slopes and the graphs of lines that have a positive slope, negative slope, zero slope, undefined slope, slopes greater than one and slopes between zero and one.  **CC.8.F.2** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.  1.2.8 Compare and contrast the slopes and graphs of lines to classify lines as parallel, perpendicular or intersecting.  **CC.8.EE.8b** Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.  1.2.9 Interpret and describe slope and *y*-intercepts from contextual situations, graphs and linear equations.  **CC.8.F.2** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.  **CC.8.SP.3** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.  **CC.8.EE.6** Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y =mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.  1.3.11 Examine systems of two linear equations in context that have a common solution, i.e. point of intersection, using tables, graphs and substitution and interpret the solution.  **CC.8.EE.8a** Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.  **CC.8.EE.8b** Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.  **CC.8.EE.8c** Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.  **CC.8.F.2** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change. |
| **COVERING BOTH GLE’S AND CCSS AND SCIENCE INTEGRATION – N/A** |
| **GLE’s but not CCSS**  1.1.3 Write and solve problems involving proportional relationships (direct variation) using linear equations (*y* = *mx*).  **CC.7.RP.2a** Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.  1.2.5 Represent linear and nonlinear mathematical relationships with verbal descriptions, tables, graphs and equations (when possible).  **CC.7.RP.2a** Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.  1.2.6 Determine the constant rate of change in a linear relationship and recognize this as the slope of a line.  **CC.7.RP.2d** Explain what a point (*x*, *y*) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (*1*, *r*) where r is the unit rate. |
| **CCSS but not GLE’s – None** |